

In the Claims

Please amend Claims 1, 5 13, 21-25, 27, and 28, as follows:

1. (Currently Amended) ~~A dual band, dual pol, 90 degree azimuth bandwidth, variable downtilt antenna having a first arrangement of dipole elements forming a first band and a second arrangement of dipole elements forming a second band.~~

An antenna, comprising:

a first arrangement of dipole elements adapted to provide a first beam in a first band; and
a second arrangement of dipole elements adapted to provide a second beam in a second
band, the antenna adapted to provide a variable downtilt of the first and second beam, and
wherein the dipole elements are further adapted to provide the first beam and second beam
having a 90 degree azimuth beamwidth.

2. (Original) The antenna as specified in Claim 1 wherein said first band is fed by a microstrip disposed upon a printed circuit board.
3. (Original) The antenna as specified in Claim 2 further comprising a first dielectric member slidably disposed over said microstrip.
4. (Original) The antenna as specified in Claim 3 wherein the microstrip has a first microstrip portion having a serpentine pattern with said first dielectric member slidably disposed thereover.
5. (Currently Amended) The antenna as specified in Claim 4 2 wherein the first microstrip portion feeds a second and a third microstrip portion each having a serpentine pattern.
6. (Original) The antenna as specified in Claim 5 further comprising a second dielectric member slideably disposed over the second microstrip portion.

7. (Original) The antenna as specified in Claim 6 further comprising a third dielectric member slideably disposed over the third microstrip portion.
8. (Original) The antenna as specified in Claim 7 further comprising a unitary member rigidly coupled to each of the first, second and third dielectric members.
9. (Original) The antenna as specified in Claim 8 wherein the unitary member slidably moves each of the first, second and third dielectric members in unison.
10. (Original) The antenna as specified in Claim 7 wherein the first dielectric member has a different dielectric constant than the second and third dielectric members.
11. (Original) The antenna as specified in Claim 10 wherein the second and third dielectric members have the same dielectric constant.
12. (Original) The antenna as specified in Claim 10 wherein the first dielectric member has a higher dielectric constant than the second and third dielectric members.
13. (Currently Amended) The antenna as specified in Claim 4 ~~2~~ further comprising a thin member disposed between the first dielectric member and the underlying first microstrip portion.
14. (Original) The antenna as specified in Claim 13 wherein the thin member is attached over the first microstrip portion.
15. (Original) The antenna as specified in Claim 14 wherein the thin member comprises a layer of adhesive material with a fixed dielectric constant.
16. (Original) The antenna as specified in Claim 15 wherein the adhesive material is Teflon® tape.
17. (Original) The antenna as specified in Claim 9 wherein the unitary member is attached to each of the first, second and third dielectric members with an adhesive.

18. (Original) The antenna as specified in Claim 9 further comprising a flexible member biased against a portion of the unitary member to resiliently bias the first member towards the first microstrip portion.

19. (Original) The antenna as specified in Claim 6 wherein the first, dielectric material is comprised of a ceramic material, and the second and third dielectric materials comprise PTFE based material.

20. (Original) The antenna as specified in Claim 19 wherein each of the first, second and third dielectric materials are planar members each having a face abutting the respective first, second and third microstrip portion.

21. (Currently Amended) The antenna as specified in Claim 1 wherein at least one said dipole antenna element has a first arm, extending at 45° and a second arm extending at about 45° with respect to the first arm.

22. (Currently Amended) The antenna as specified in Claim 21 wherein at least one said dipole antenna element has a first arm extending generally horizontal, and another opposite second arm extending at 45° with respect to the first arm.

23. (Currently Amended) The antenna as specified in Claim 2 further comprising 1 wherein the antenna elements are dipoles, with a Balun capacitively coupled to one said dipole element.

24. (Currently Amended) The antenna as specified in Claim 23 wherein said Balun is capacitively coupled to the microstrip, and the other said dipole is directly connected to a ground plane formed proximate the microstrip to form a localized contact.

25. (Currently Amended) The antenna as specified in Claim 7 wherein the second and third dielectric members shift a phase of a signal applied to the respective antenna dipoles, and the first dielectric member shifts a phase of a signal applied to the first microstrip portion at approximately a 3:1 ratio with respect to the phase shift created by second and third dielectric member. ~~microstrip~~^{microstrip}

26. (Original) The antenna as specified in Claim 1 wherein the first band comprises a cellular band, and the second band comprises a PCS band.

27. (Currently Amended) The antenna as specified in Claim 26 wherein the cellular band comprises a center arrangement of the first arrangement of dipole elements ~~antenna dipoles~~, and the PCS band comprises the second arrangement of dipole elements ~~a pair of antenna dipole arrangements~~ disposed along each side of the cellular band dipole elements ~~antenna dipoles~~.

28. (Currently Amended) The antenna as specified in Claim 27 wherein the PCS band ~~antenna dipoles~~ dipole elements are mechanically configured differently than the cellular band antenna dipole elements ~~dipoles~~ and are adapted to reduce cross polarization.

29. (Currently Amended) The antenna as specified in Claim 28 wherein the PCS and cellular band dipole elements ~~each have at least~~ antenna dipoles have one arm, ~~wherein one PCS band dipole element arm extends at a 45° angle with respect to one cellular band dipole element arm.~~ ~~extending at an angle offset at least 45 degrees from an arm of the other dipole.~~

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